



Aircraft Crash Debris Recovery Mobile Application

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The Problem

Crash Site Debris Recovery Mobile Application (Crash App)

A prototype Windows Phone application that can identify possible locations of high concentrations of aircraft debris after a ground-impact crash.

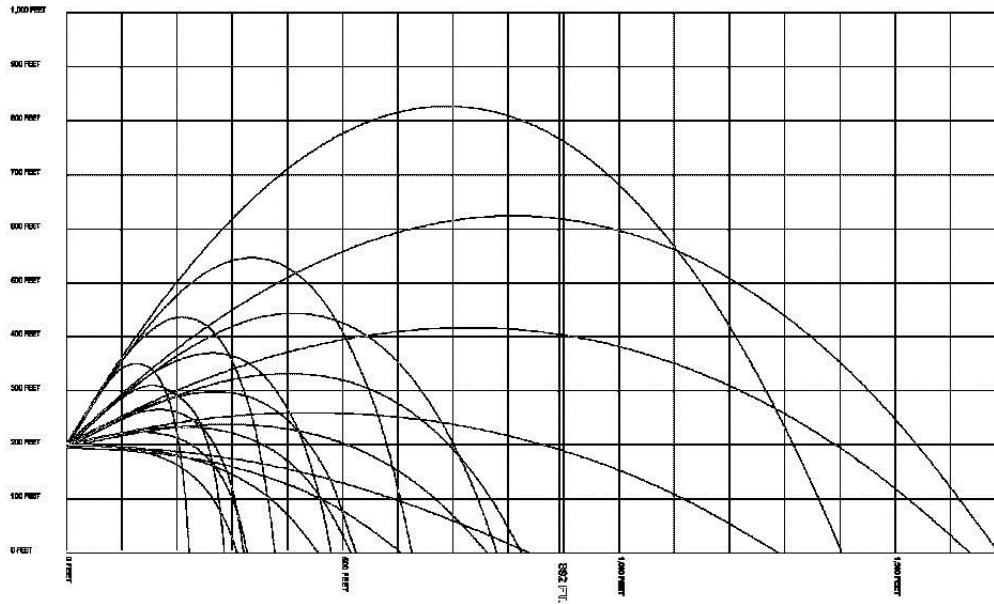


The Solution

- 
- Windows Phone
 - Debris Model
 - Geoprocessing Service
 - Basemap

Application Components

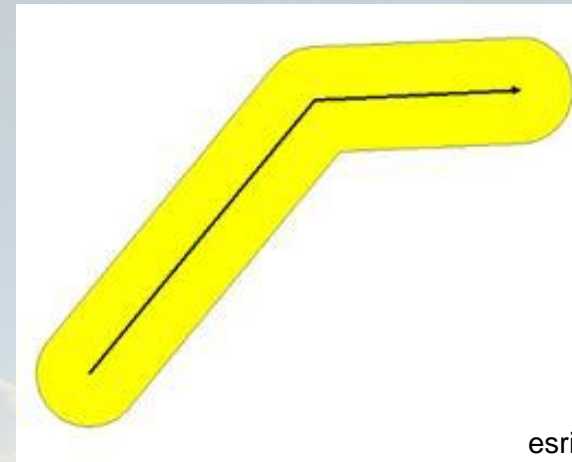
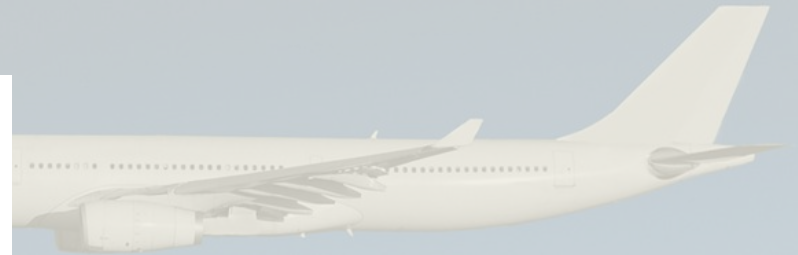
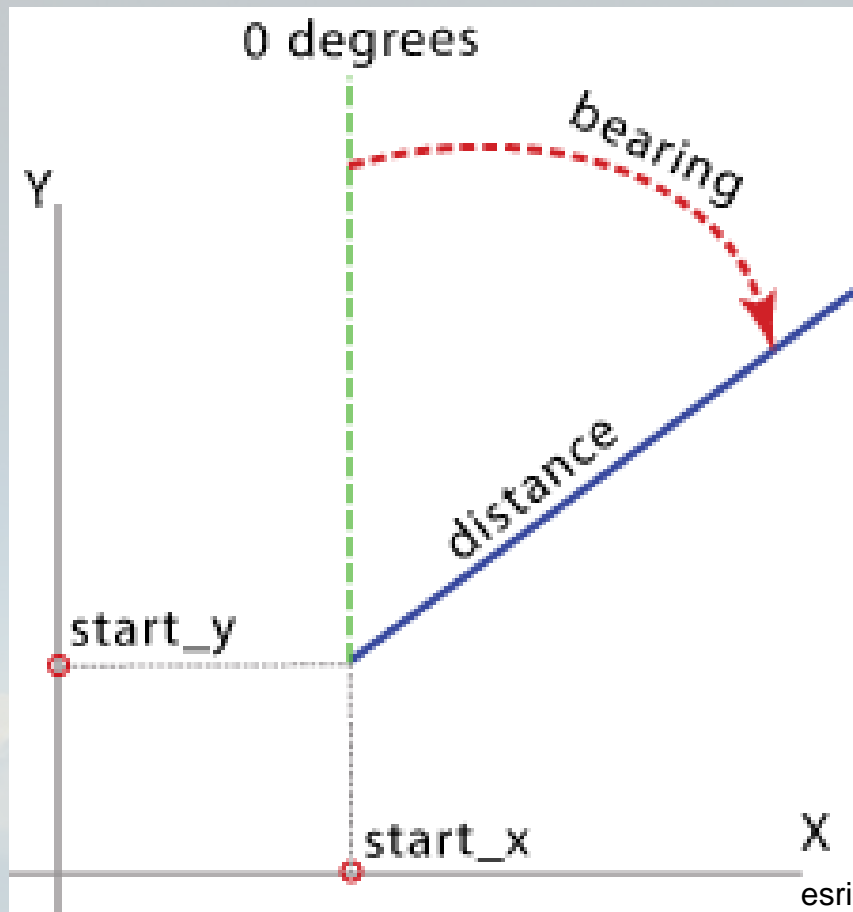
PROJECTED DEBRIS FLIGHT PATH
GRAPH 6
COMBINED DATA FROM GRAPH 2-5



Hugh Oldham



Application Components



Application Components



Basemaps

ArcGIS Online hosts basemaps you can use in your ArcGIS applications.

Online Maps & Tasks

Basemaps

Demographic Maps

Reference and Specialty Maps

Bing Maps

Tasks

Help

ArcGIS Online and Bing Maps Information Guide

Blog

Online Services Life Cycle

Forum

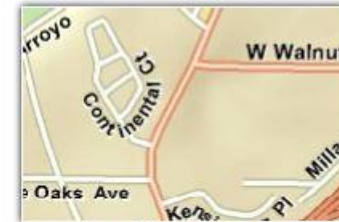
Get Support



World Topographic Map



World Terrain Base



World Street Map



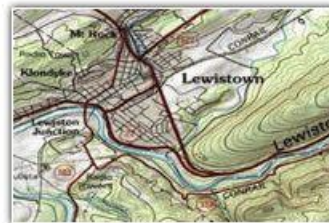
World Shaded Relief



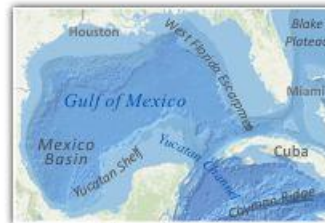
World Light Gray Base



World Imagery



USA Topo Maps



Ocean Basemap



National Geographic World Map

Application Components



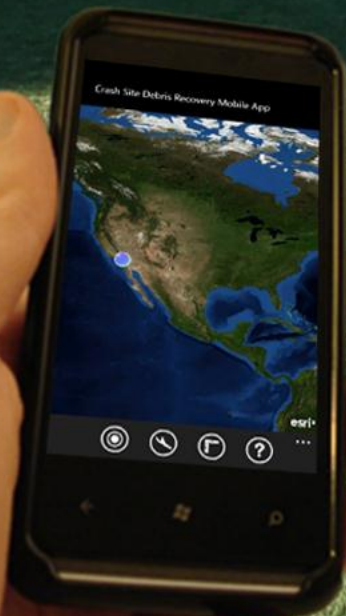
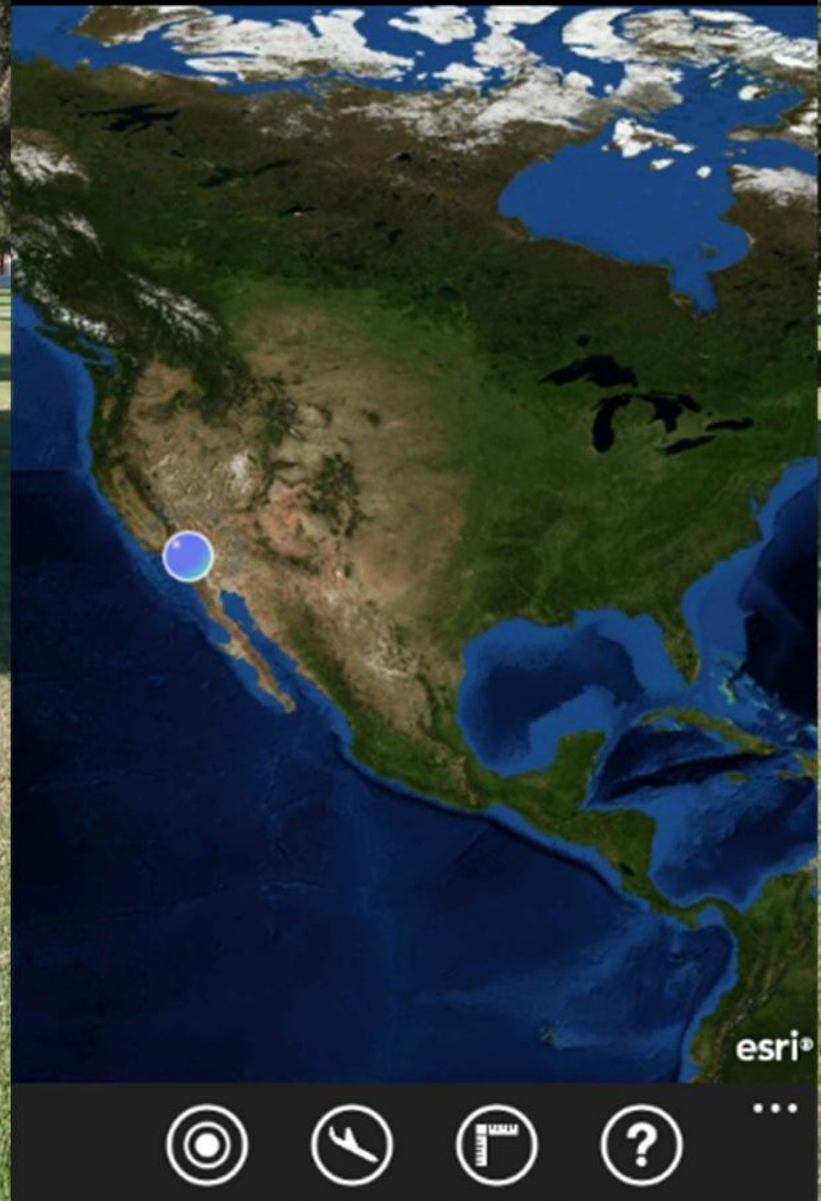
Demonstration



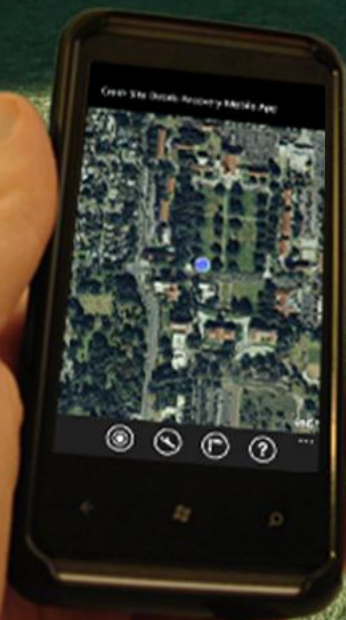
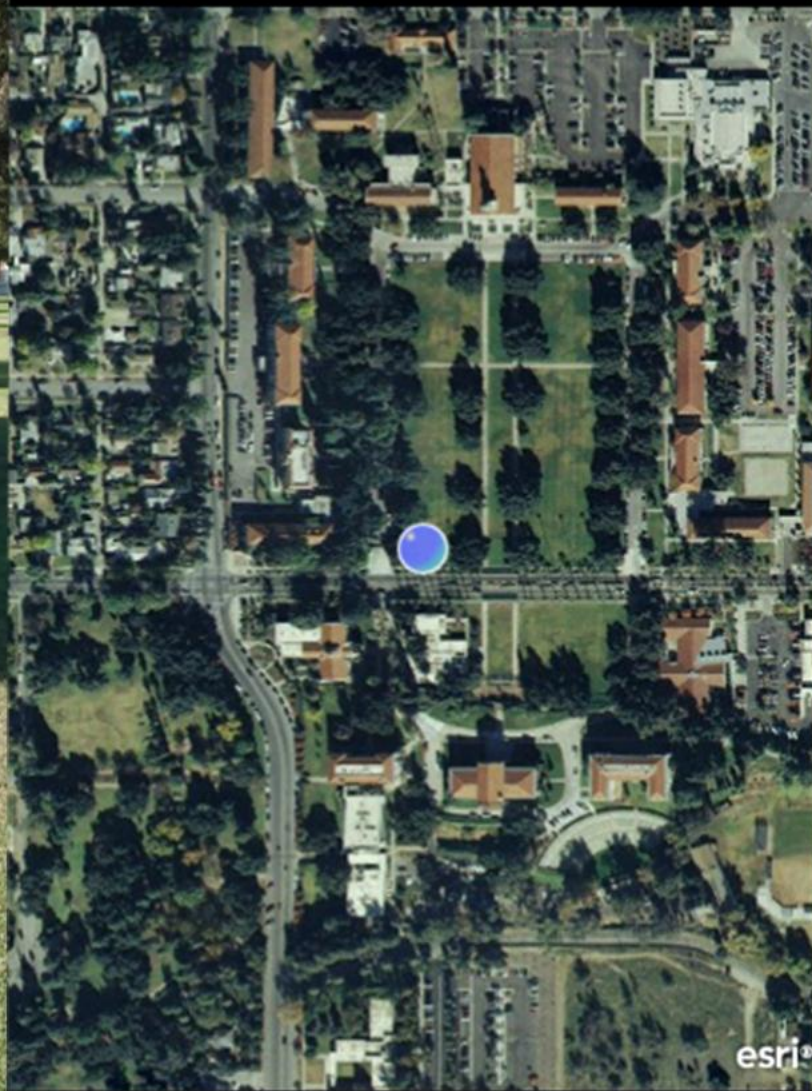




Crash Site Debris Recovery Mobile App



Crash Site Debris Recovery Mobile App



Set Impact Location

Set the airplane impact location at this location (latitude 34.06 longitude -117.17) at an elevation of 430ft?

ok

cancel

Set Impact Location

Set the airplane impact location at this location (latitude 34.06 longitude -117.17) at an elevation of 430ft?

ok

cancel

esri®

Crash Site Debris Recovery Mobile App

aircraft type fli

Aermacchi S-211
Beechcraft Model 99
Boeing 747-200
Boeing 737-200
Cessna 172 Skyhawk
Cessna 310
Convair 880
Douglas DC-8-32
Hawker Beechcraft Hawker 800
Learjet 24
Lockheed F-104 Starfighter
Lockheed JetStar
Lockheed Martin F-22 Raptor
McDonnell Douglas F-4 Phantom II



Crash Site Debris Recovery Mobile App

flight info opti

Speed of Aircraft (kts)

78

Aircraft Heading (deg)

21

Angle of Aircraft Descent

42



Crash Site Debris Recovery Mobile App

optional result

Ground Wind Speed (kts)

3

Ground Wind Direction (deg)

272

Terrain Angle (deg)

Aircraft Terrain Direction

Upslope
Downslope



Crash Site Debris Recovery Mobile App

results aircraft

Debris Terminal Velocity:

622.53 kts

Time to Impact:

6.75 sec

Debris Throw Distance:

825.43 ft

Angle of Impact:

-42.09 deg

Speed of Impact:

110.05 kts

Max Altitude of Thrown Debris:

184.29 ft

Calculate

Map

Crash Site Debris Recovery Mobile App

results aircraft

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622.53 kts

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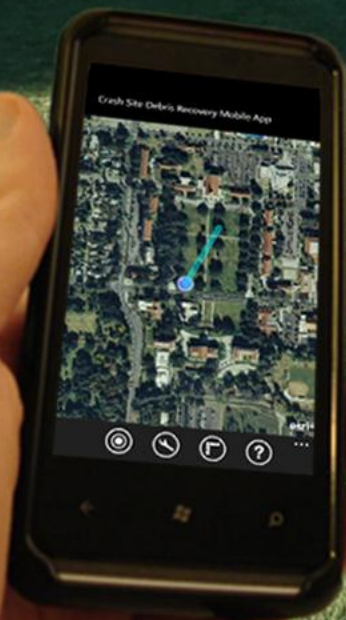
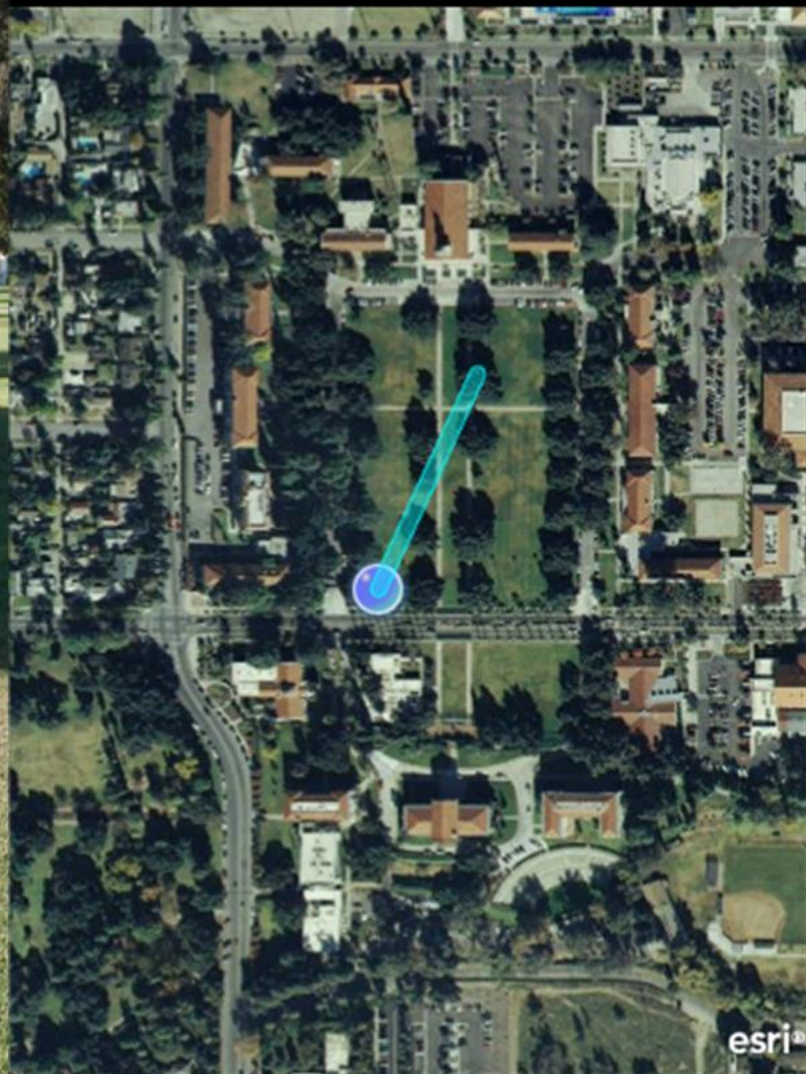
Calculate

Map

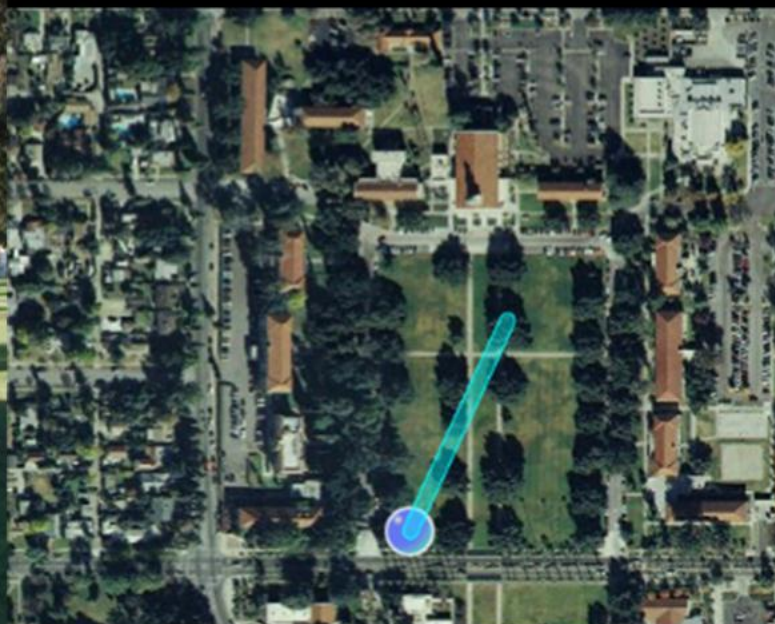




Crash Site Debris Recovery Mobile App



Crash Site Debris Recovery Mobile App



me



impact



calculate

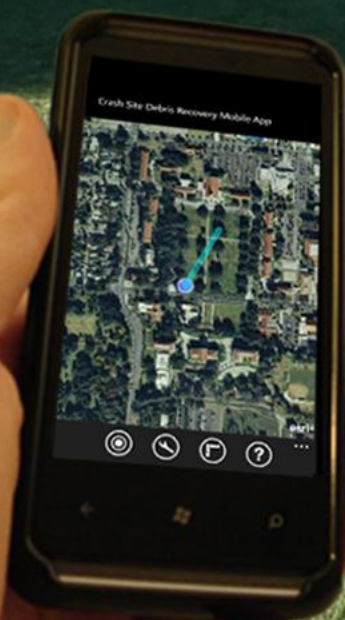


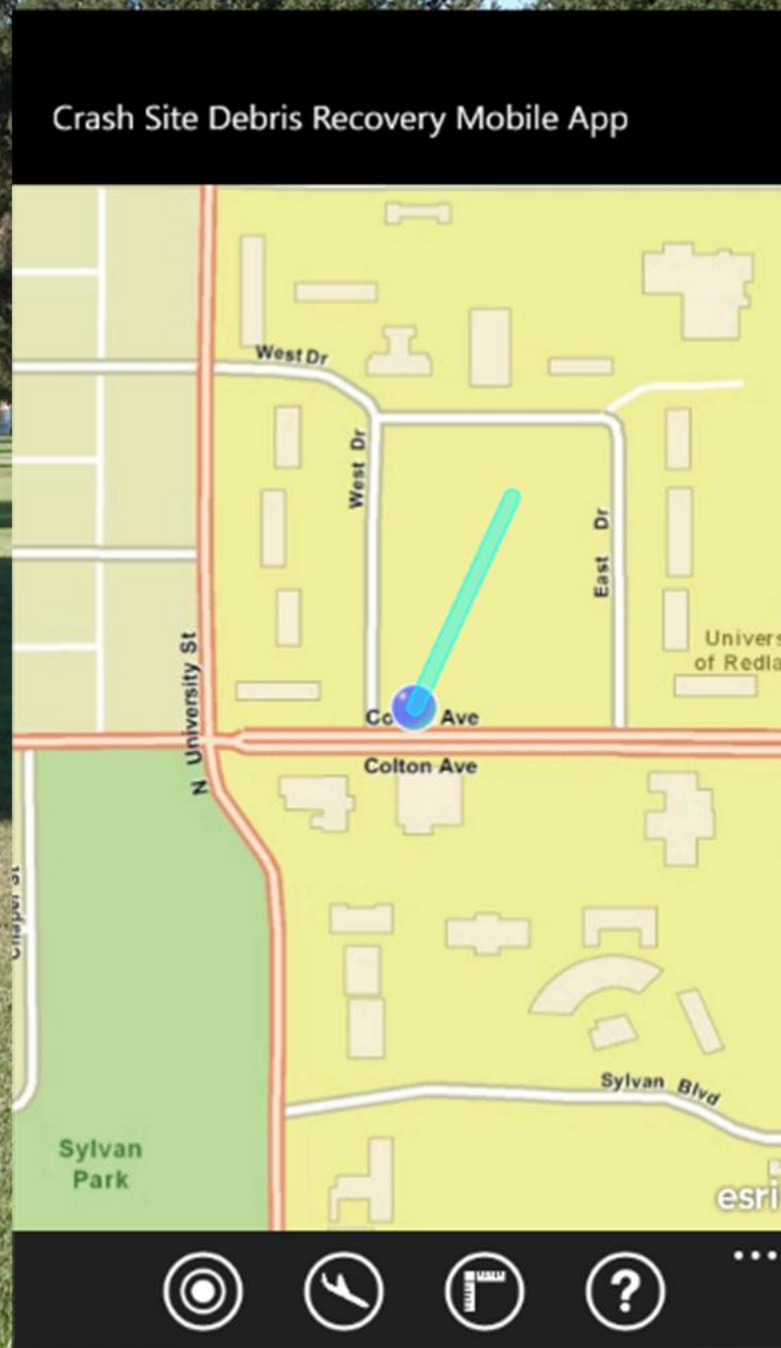
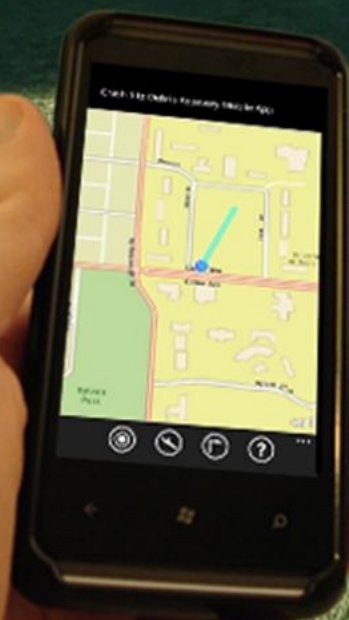
help

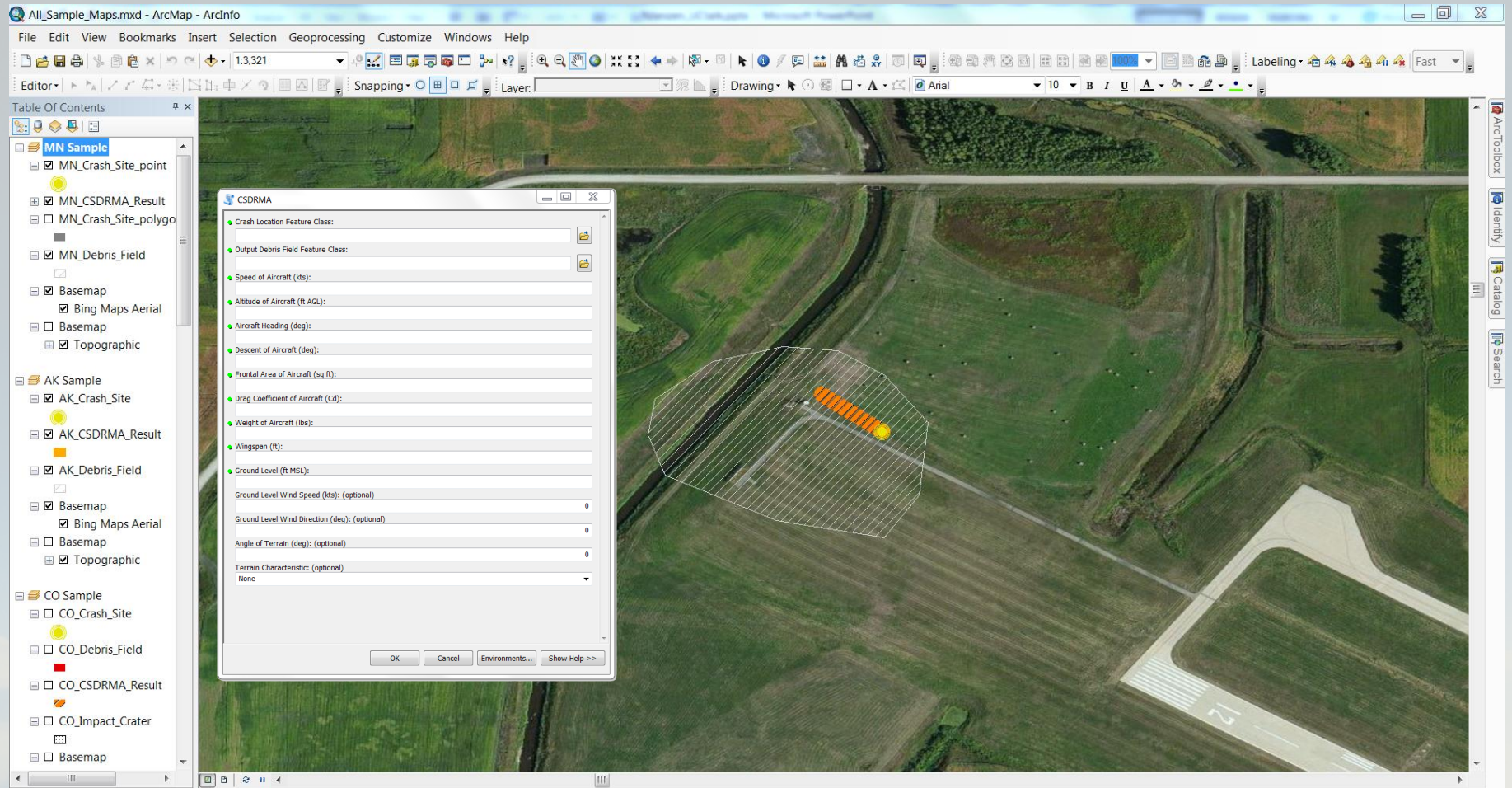


esri imagery basemap

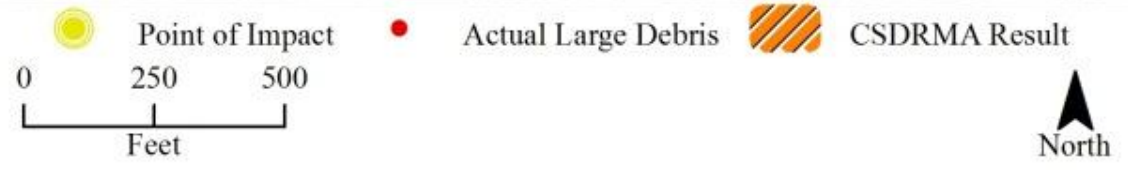
esri street basemap



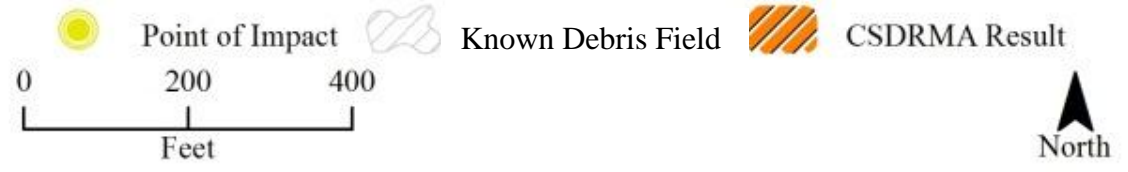




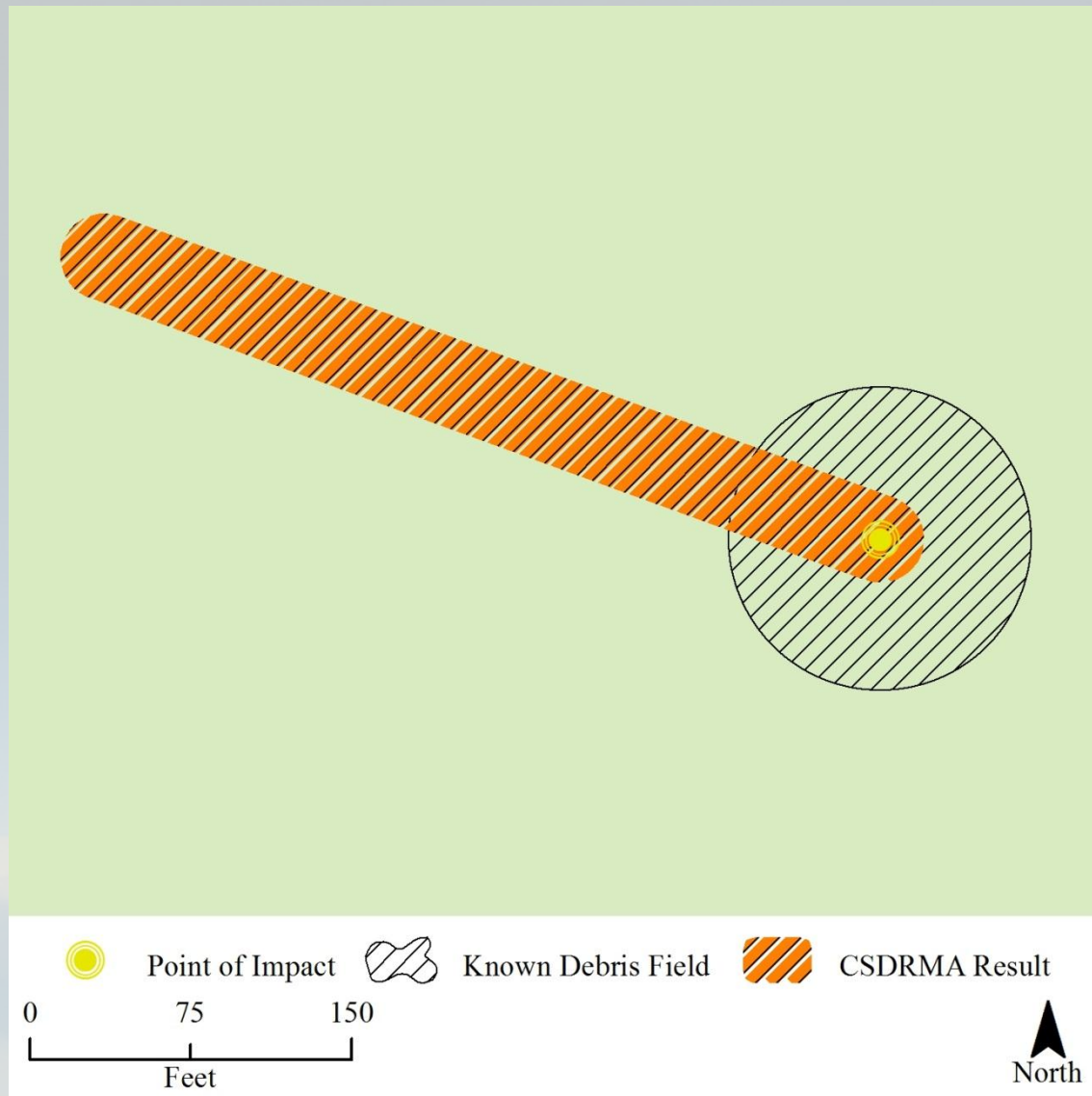
Testing



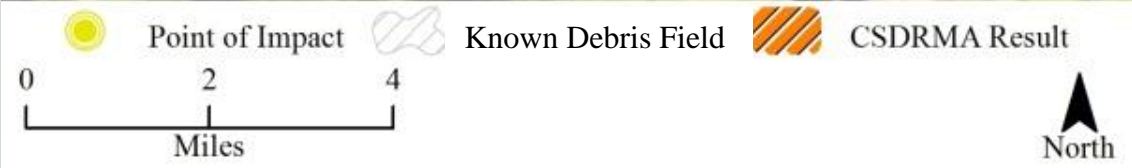
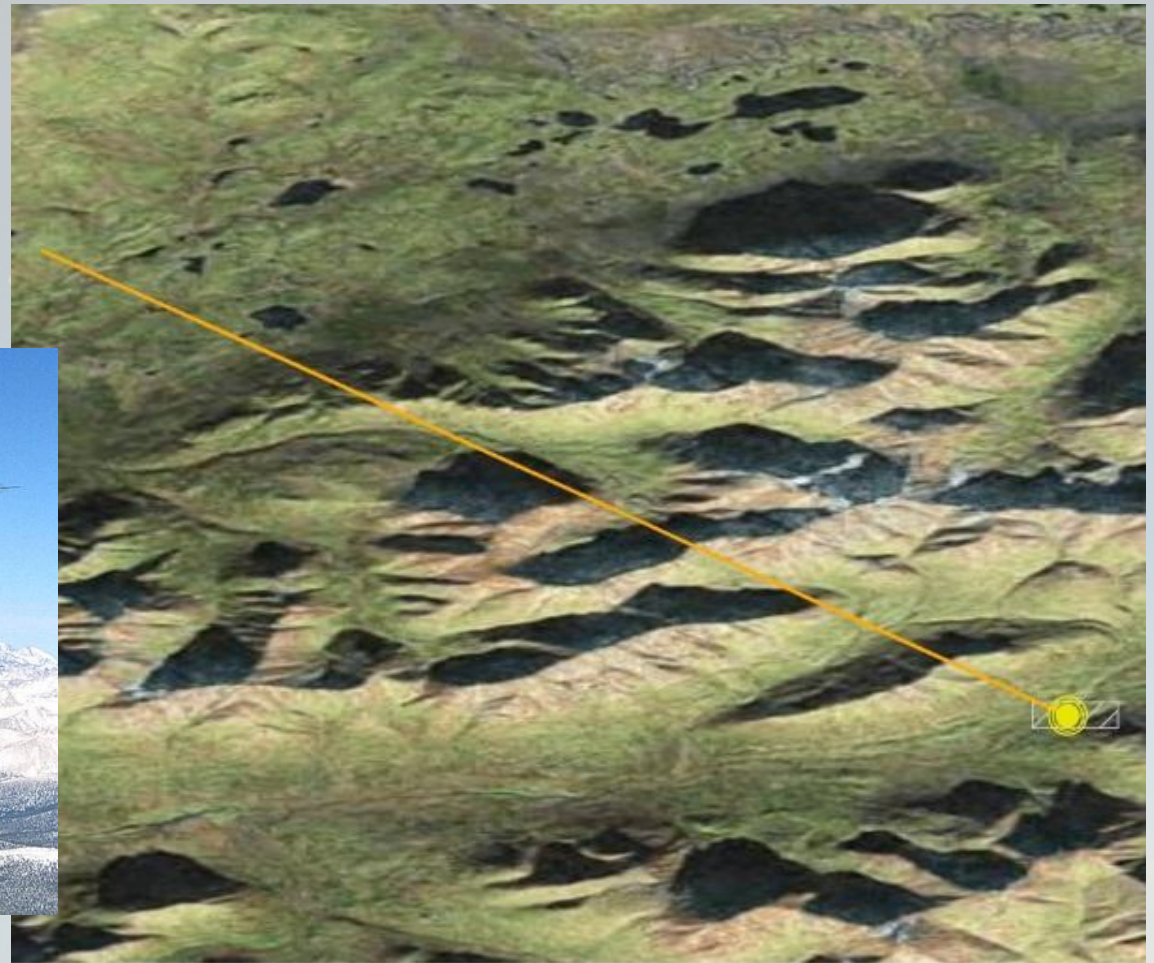
Testing (continued)




Testing (continued)



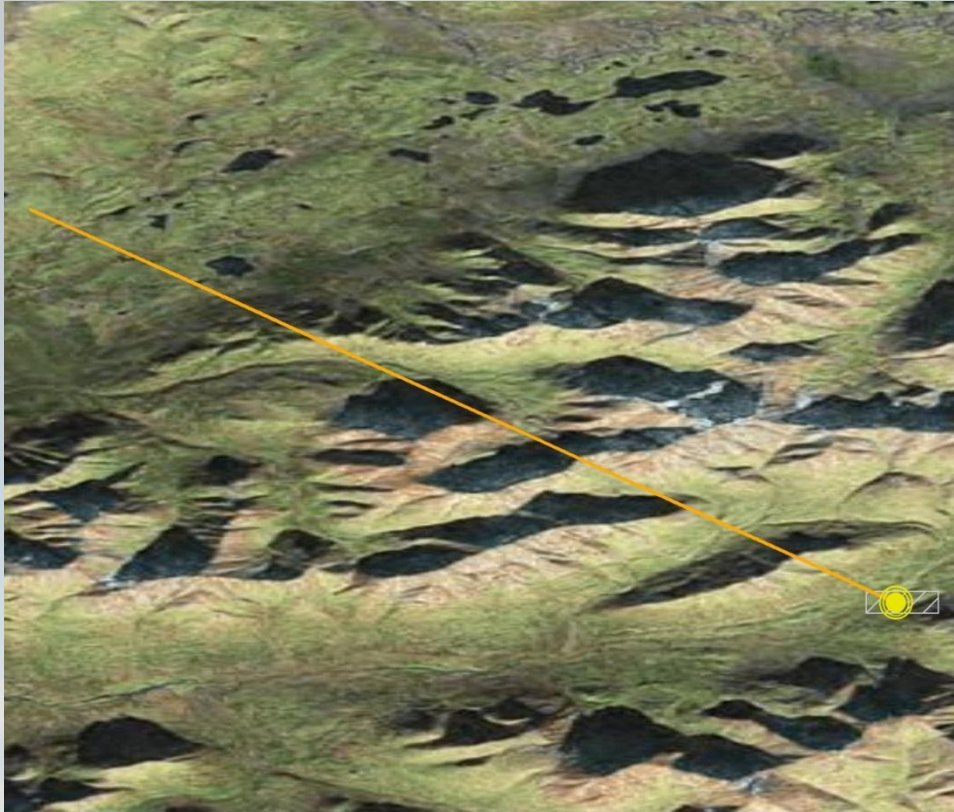
Testing (continued)



Testing (continued)

- 
- Use a more accurate and adaptable debris model
 - Develop a way to better utilize terrain data
 - Develop a way for the user to save debris locations
 - Develop Apple and Android versions

Areas of Future Development Consideration



Areas of Future Development Consideration (continued)



Conclusion



For more information visit:
www.mojavedata.gov/crash.html

Thank You